

Amendments to the Claims:

1. (currently amended): ~~An~~ A rechargeable electrochemical cell which is subject to a charging cycle and a discharging cycle, the charging cycle having a charging portion corresponding to a gassing charge where a gas is generated and a charging portion below the gassing charge, the rechargeable electrochemical cell comprising opposed positive and negative electrodes, and an aqueous electrolyte in ionic contact with the electrodes for supporting current flow therebetween, and charge dependant impeding means in fluid communication with the negative electrode for impeding the gassing charge, the charge dependant impeding means being activated by the charging portion corresponding to the gassing charge and being deactivated by the charging portion below the gassing charge such that during the portion of the charging cycle corresponding to the gassing charge, the gassing charge is impeded to limit gas generation and below the gassing charge the charge dependant impeding means has substantially no charge limiting effect ~~the electrochemical cell being disposed to cause electrolysis when a sufficient amount of a potential is applied across the electrodes, the electrochemical cell further comprising a current impeding medium that provides through contact with the electrolyte a resistive path in a flow of a current between the electrodes when a potential sufficient to cause electrolysis of the electrolyte is applied across the electrodes, thereby to reduce the flow of the current between the electrodes and consequently reducing the amount of electrolysis.~~

2. (currently amended): An electrochemical cell according to claim 1, wherein the ~~current impeding medium~~ charge dependent impeding means ~~is selected from the group comprising a quaternary ammonium compounds including selected from the group consisting of~~ n-alkyl dimethyl benzyl ammonium chloride, didecyl dimethyl ammonium chloride, didecyl methyl oxyethyl ammonium propionate, pyridine and quinoline, a non-ionic compounds including selected from the group consisting of primary, secondary, and tertiary, aliphatic and cycloaliphatic amines, and or an anionic compounds including sodium dioctyl sulpha succinate, ~~the anionic compounds being included in the presence of suitable cations which is provided in the presence of a suitable cation to attract it to the negative electrode.~~

3. (currently amended): An electrochemical cell according to claim 2, wherein the charge dependent impeding means ~~current impeding medium~~ is n-alkyl dimethyl benzyl ammonium chloride, the alkyl group having n carbon atoms, n being an integer from 12 to 16.

4. (currently amended): An electrochemical cell according to claim 3, wherein the n-alkyl dimethyl benzyl ammonium chloride is ~~added to the electrolyte~~ present in an amount of about 5 mg/l to about 1500 mg/l, by weight, of the n-alkyl dimethyl benzyl ammonium chloride ~~in the electrolyte.~~

5. (currently amended): An electrochemical cell according to claim 4, wherein the n-alkyl dimethyl benzyl ammonium chloride is ~~added to the electrolyte~~ present in an amount of about 5 mg/l to about 75 mg/l, by weight, of the n-alkyl dimethyl benzyl ammonium chloride ~~in the electrolyte.~~

6. (currently amended): A method ~~of~~ for reducing water loss, due to electrolysis, in an a rechargeable electrochemical cell which is subject to a charging cycle and a discharging cycle, the charging cycle having a charging portion corresponding to a gassing charge where a gas is generated and a charging portion below the gassing charge, the method comprising:

providing a rechargeable electrochemical cell of the type having opposed positive and negative electrodes and having an aqueous electrolyte in ionic contact with the electrodes for supporting current flow therebetween, and being disposed to cause electrolysis of the electrolyte when a sufficient amount of a potential is applied across the electrodes, the method including the steps of introducing into the cell a current impeding medium that provides through contact with the electrolyte a resistive path in a flow of a current between the electrodes when a potential sufficient to cause electrolysis of the electrolyte is applied across the electrodes, and applying sufficient potential to cause electrolysis of the electrolyte across the electrodes to activate the current impeding medium into providing a resistive path to the flow of a current between the electrodes, thereby reducing electrolysis of the electrolyte

providing a charge dependant impeding means in fluid communication with the negative electrode for impeding the gassing charge, the charge dependant impeding means being activated by the charging portion corresponding to the gassing charge and being deactivated by the charging portion below the gassing charge, and

applying a charging cycle to the rechargeable electrochemical cell, activating the charge dependant impeding means when a gassing charge is attained to limit the gassing charge to reduce gas generation.

7. (cancelled)


8. (cancelled)

9. (cancelled)

10. (currently amended): A method according to claim 6, wherein the charge dependant impeding means ~~current impeding medium~~ additionally ~~forms an impediment or barrier at the negative electrode to~~ impedes the flow of ions being attracted to the negative electrode or gas bubbles evolving from the negative electrode.

11. (previously amended): A method according to claim 10, wherein the ions being attracted to the negative electrode are hydrogen ions and the gas bubbles evolving from the negative electrode are hydrogen bubbles.

12. (currently amended): ~~An~~ A rechargeable electrochemical cell which is subject to a charging cycle and a discharging cycle, the charging cycle having a charging portion corresponding to a gassing charge where a gas is generated and a charging portion below the gassing charge, the rechargeable electrochemical cell comprising opposed positive and negative electrodes, and an aqueous electrolyte in ionic contact with the electrodes for supporting current flow therebetween, and charge dependant impeding means in fluid communication with the

 negative electrode for impeding the gassing charge, the charge dependant impeding means being activated by the charging portion corresponding to the gassing charge to impede the gassing charge to reduce gas generation at the negative electrode, and being deactivated at a charging portion below a gassing charge to have substantially no charge limiting effect, the charge dependant impeding means forming a barrier over a surface of the negative electrode to ions attracted to the negative electrode ~~the electrochemical cell being disposed to cause electrolysis of the electrolyte when a sufficient amount of a potential is applied across the electrodes, the electrolysis being caused by a flow of current between the electrodes and being accompanied by a flow of ions to the negative electrode and/or a flow of bubbles from the negative electrode, the electrochemical cell further comprising a current impeding medium that provides through contact with the electrolyte an impediment or barrier over a surface of the negative electrode when a sufficient potential is applied across the electrodes to cause electrolysis of the electrolyte, the impediment or barrier providing at least one of: (a) a reduction in the flow of current between the electrodes; (b) a reduction in the flow of ions to the negative electrode; or (c) a reduction in the flow of gas bubbles from the negative electrode.~~

13. (currently amended): An electrochemical cell according to claim 12, wherein the charge dependant impeding means ~~current impeding medium~~ traps gas bubbles evolving from the negative electrode to form the ~~impediment or barrier~~.

14. (currently amended): An electrochemical cell according to claim 13, wherein the charge dependant impeding means ~~current impeding medium~~ includes a head portion that is attracted to the negative electrode and a tail portion extending away from the head portion, the tail portion being arranged to trap the gas bubbles evolving at the negative electrode.

15. (currently amended): An electrochemical cell according to claim 1, wherein the rechargeable electrochemical cell is a secondary battery cell.

16. (currently amended): An electrochemical cell according to claim 15 2, wherein the ~~current impeding medium does not negatively affect a discharging~~ charge dependant impeding means has substantially no effect during the discharge cycle of the secondary battery cell.

17. (currently amended): An electrochemical cell according to claim 15 2, wherein the ~~current impeding medium~~ charge dependant impeding means provides an improved cycling performance of the secondary battery cell.

18. (cancelled)

19. (currently amended): An electrochemical cell according to claim 14, wherein the ~~impediment or barrier~~ is self regulating, the greater the amount of electrolysis, the greater the number of gas bubbles that are trapped and the more effective the ~~impediment or barrier~~ to the flow of ions to the negative electrode, thereby the more electrolysis is reduced, and vice versa.

20. (currently amended): An electrochemical cell according to claim 12, wherein the barrier provides a reduction in the flow of ions ~~includes metal ions~~ selected from the group comprising lead, antimony, arsenic, tin, iron, zinc, chromium, copper and silver ions, ~~and other ions of metals conventionally used in lead acid battery cells and other electrochemical cells.~~

21. (cancelled)

22. (new): The electrochemical cell of Claim 1 wherein the charging cycle comprises a substantially constant potential being applied to the opposed positive and negative electrodes.

23. (new): The electrochemical cell of Claim 1 wherein the charge dependant impeding means when activated impedes a flow of ions to the negative electrode.

24. (new): The electrochemical cell of Claim 1 wherein the charge dependant impeding means when activated reduces gas emitted from the electrochemical cell.

25. (new): The electrochemical cell of Claim 1 wherein the charge dependant impeding means when activated impedes electrolysis of the electrolyte.

26. (new): The electrochemical cell of Claim 1 wherein the charging cycle comprises a substantially constant current being applied to the opposed positive and negative electrodes.

27. (new): The electrochemical cell of Claim 23, wherein the ions are selected from the group comprising lead, antimony, arsenic, tin, iron, zinc, chromium, copper and silver ions.

28. (new): A lead-acid battery comprising opposed positive and negative electrodes, an aqueous electrolyte in ionic contact with the electrodes for supporting current flow therebetween, and a quaternary ammonium compound in fluid communication with the negative electrode for impeding the flow of current between the electrodes when a potential sufficient to cause electrolysis of the electrolyte is applied across the electrodes.

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